If you are using a printed copy of this procedure, and not the on-screen version, then you MUST make sure the dates at the bottom of the printed copy and the on-screen version match. The on-screen version of the Collider-Accelerator Department Procedure is the Official Version. Hard copies of all signed, official, C-A Operating Procedures are available by contacting the ESSHQ Procedures Coordinator, Bldg. 911A

C-A OPERATIONS PROCEDURES MANUAL

18.9.1 Procedure for Testing the ERL Klystron Power Supply

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Hand Processed Changes

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Approved: _____***Signature on File***_____ _____
Collider-Accelerator Department Chairman Date

R. Lambiase

18.9.1 Procedure for Testing the ERL KlystronPower Supply

1. Purpose

This procedure provides instructions to operate the ERL power supply under the following test conditions:

1.1 HV Load - The high voltage load will be a resistive test load as supplied by the manufacturer of the transmitter and power supply. This load will simulate both the klystron and klystron filament. The resistance of the high voltage load is approximately 25 MOhm, resulting in 4 mA of current at 100 kV. The filament load is approximately 1 Ohm. Because this resistive load is used, there will be no radiation produced from the klystron.

1.2 Active Klystron Connections - The following parts of the klystron will be energized during the test: water circuits, interlocks, solenoid magnets, temperature sensors, window blowers, and VacIon pumps.

2. Responsibilities

One of the five system experts, N. Laloudakis, S. Deonarine; J. Butler; R. Lambiase or A. Zaltsman, will be present during the testing as described in this procedure. One of the system experts must perform the Group LOTO of the switchgear.

3. Prerequisites

Prior to performing this procedure, all the requirements of the "MCR Check List" must be satisfied.

4. Precautions

The Kystron transmitter and power supply is a high voltage, high power system.

5. Procedure

5.1 Visually inspect the secondary containment area of the filter and high voltage tanks for leaks. If there is any evidence of leaks, call x2222, and do not continue with this procedure.

5.2 Visually inspect the secondary containment area of the test load. If there is any evidence of leaks, call x2222, and do not continue with this procedure.

5.3 If either area has been opened, insure that a sweep is performed of the klystron enclosure and the transformer room as per ERL Klystron System Sweep Checklist Procedure, 18.9.1.a.

5.4 TURN ON PROCEDURE

Class 2 PPE required for all work performed at switchgear

a) At the **User Interface Unit 1-A1,** energize the transmitter PLC, and check for any power supply interlock faults.
b) On the switchgear, remove the Group LOTO on the **Grounding Switch**.
c) On the switchgear, move the **Grounding Switch** to the OPEN position**.**
d) On the switchgear, move the **Connecting Switch** to the CLOSE position.
e) On the switchgear, move the **Circuit Breaker Control Switch** to the ON position, the red lamp should light.

5.5 Operate the transmitter and perform tests.

5.6 TURN OFF PROCEDURE

Class 2 PPE required for all work performed at switchgear

a) On the switchgear move the **Line Voltage/Load Voltage** switch to position #2
b) Using the meter on the switchgear and the **Phase Voltage Selector** switch verify that each phase indicates 4160 VAC.
c) Shut off the High Voltage at the **User Interface Unit 1-A1**.
d) Using the meter on the switchgear and the **Phase Voltage Selector** switch verify that each phase indicates 0 VAC.
e) On the switchgear move the **Circuit Breaker Control Switch** to the TRIP position. Verify the green light goes on.
f) On the switchgear move the **Connecting Switch** to the OPEN position. Visually verify that the disconnect blades have disengaged. On the switch gear.
g) On the switchgear, move the **Grounding Switch** to the CLOSE position.
h) Place the Group LOTO Lock on the **Grounding Switch**, place key in ERL Lockbox. Personnel working on the system are to hang their LOTO locks on the Lockbox.

6. Documentation

6.1 The MCR Check List for klystron transmitter and HVPS testing.

6.2 The sweep procedure for the klystron enclosure and transformer room.

7. References

None

8. Attachments

None